Summary Minutes of the Science Advisory Board
Executive Committee Quarterly Public Meeting
July 16-17, 2003
EPA Region 5, Metcalfe Federal Building, Chicago, IL

Committee Members: See Roster – Attachment B.

Date and Time: Wednesday, July 16, 2003, 9:00 a.m – 4:45 p.m.
Thursday, July 17, 2003, 8:30 a.m – 12:00 p.m.

Location: U.S. EPA Region 5, Lake Michigan Room, 12th Floor Adamkus Conference Center, Metcalfe Federal Building 77 West Jackson Blvd., Chicago, IL

Purpose: The purpose of this meeting was for the Science Advisory Board (SAB) to receive briefings from, and discuss scientific issues with regional senior leadership and scientists, and to discuss the operating plan for FY2003, including projects submitted by the Agency and the self-initiated projects proposed by the SAB.

Attendees:

Chair: Dr. William Glaze

Members:
Dr. Henry A. Anderson
Dr. Greg Biddinger (for Dr. Dale)
Dr. Trudy Cameron (via teleconference, 7/17)
Dr. Maureen Cropper (7/17)
Dr. Kenneth Cummins
Dr. Janet Johnson
Dr. Roger Kasperson
Dr. Raymond Loehr
Dr. Genevieve Matanoski
Dr. M. Granger Morgan (7/16; telecon. 7/17)
Dr. Rebecca Parkin
Dr. Gerald Schnoor
Dr. Thomas Theis (for Dr. Grasso)

EPA SAB Staff:
Dr. Joseph Bachman
Mr. Robert Flaak (Designated Federal Officer)
Dr. K. Jack Kooyoomjian
Mr. Tom Miller (via teleconference, 7/17)
Ms. Diana Pozun
Dr. James Rowe
Dr. Phillip Sayre
Dr. Sue Shallal
Ms. Beth Sickelka
Dr. Vanessa Vu (SAB Staff Office Director)
Ms. Kathleen White

Others Attending: Gilberto Alvarez, USEPA R5

Al Alwan, USEPA R5
Thomas Baugh, USEPA R4
Jan Baxter, USEPA R9
Morris Beaton, USEPA R5
Thomas Brody, USEPA R5
Michael Callahan, USEPA R6
Motria Caudill, USEPA R5
Patricia Cirone, USEPA R10
Rollie Hemmett, USEPA R5
Jerri Garl, USEPA R5
Steve Jann, USEPA R5
Rosalyn Johnson, USEPA R5
Henry Lee, USEPA ORD
Dale Luecht, USEPA R5
David Macarus, USEPA R5
Russ Martin, USEPA R5
Bharat Mathur, USEPA R5
Charles Maurice, USEPA R5
Barb Mazur, USEPA R5
Dale Meyer, USEPA R5
Jane Neumann, USEPA R5
Mari Nord, USEPA R5
Kim Null, USEPA
John Perrecone, USEPA R5
John Persell, MN Chippewa Tribe
Howard Pham, USEPA R5
James Schardt, USEPA GLNPO
Joan Tanaka, USEPA R5
Roger Taylor, National Renewable Energy Lab (NREL)
Winona Victery, USEPA R9
Kevin Vuilleumier, USEPA R5
Dennis Wesolowski, USEPA R5
Mary White, USEPA R5
Jeff Yurk, USEPA R6
Harold Zenick, USEPA ORD

Meeting Summary

The discussion generally followed the issues and general timing as presented in the meeting Agenda (Attachment A). The meeting lasted until 4:45 p.m. on July 16th and until 12:00 noon on July 17th.

Convene Meeting, Welcome, and Opening Remarks

Mr. Robert Flaak, Designated Federal Officer (DFO) for the Executive Committee (EC) opened the meeting by welcoming all attendees, and introduced the Science Advisory Board (SAB) staff present. This is the first time that the EC is meeting in an EPA regional office and presents an opportunity for the Board to gain a better understanding on issues of importance to the regions.

Dr. Vanessa Vu, SAB Staff Office Director, emphasized that this would be a valuable opportunity for the Board and commented on the enthusiastic support received from the Region 5 Deputy Administrator (Mr. Bharat Mathur).

Dr. William Glaze, EC Chair, stated that one of the SAB's roles is to provide counsel and advice to the Agency on science and technical issues, in addition to reviewing work products. To better fulfill this role the SAB must be aware of the different ways in which regions conduct business and the particular constraints that they face. He introduced the EC members present at the meeting.

Use of Science in Regional Decision Making

Overview and Introduction
Mr. Bharat Mathur, Deputy Regional Administrator, Region 5

Mr. Bharat Mathur presented an introduction on the use of science in regional decision making. The role of the regional offices is to assist the states in accomplishing Federal and state environmental objectives – the majority (80%) of Federal programs are implemented at the state level. As the regions lack the capacity to conduct environmental science such as risk assessments, they rely on the Agency laboratories for science and technical advances, particularly as environmental programs are changing. Emerging issues include pollutants for which there are no regulations and environmental justice concerns, among others. All ten EPA regions could benefit from the SAB's feedback and reaction on their ongoing work, either through informal sessions or occasional formal consultations. Timeliness is also crucial to the regions, as decisions often need to be made very quickly.

EC members asked for clarification of what was meant by "timeliness", and for some examples of areas where the SAB could play a major role. They also wanted to know what added value the SAB could provide compared to other review bodies; and whether environmental justice topics are of greater importance in the regions than the Agency as a whole. Dr. Glaze also inquired to what extent Region 5 problems are typical of those in other regions.

Mr. Mathur cited cumulative risk assessment as a good example of a regional effort that would benefit from SAB advice. With respect to timeliness, decisions are often needed in days and weeks; however, plans can be adjusted to involve the SAB at the earliest stage possible. Review by the SAB would have added credibility compared to other groups as it is independent of the Agency. The topic of environmental justice is increasingly important in the permitting process. Although most regions face similar challenges, they may be working on different problems at different times.

Mr. Gilberto Alvarez, Chair of the Region 5 Regional Science Council (RSC), reviewed the day's agenda, consisting of presentations on regional science topics.

45-Day Review for Science
Mr. Thomas Baugh, Regional Science Liaison, Region 4

Mr. Baugh presented a report on the use of science for regional decision making (see Attachment F for PowerPoint slides). A draft was recently completed by a multi-regional workgroup led by Region 4, and a final report is expected by July 18, 2003. This effort was initiated by Dr. Paul Gilman's request for a 45-day review of science to determine how it is used in regional decision-making; what obstacles prevent the use of science in the most optimal manner; and how these obstacles might be overcome. The report contains an introduction to the topic, followed by two cases studies illustrating problems that the Regions face and how science was used to address these problems. Obstacles to better science are then identified and organized into five main themes. Several recommendations are proposed for overcoming each of the obstacles listed. Although the report highlights the critical challenges in using science in regional decision making, further analysis and study of this topic is needed.

The EC discussed potential roles for the SAB in assisting the regions: reviews or consultations by the SAB may be best suited to large projects or those that impact multiple regions. Board members also suggested that the Agency provide better search tools and training for regional staff; and that the regions make use of their local academic resources. Dr. Baugh stated that regions currently engage the academic community through Science to Achieve Results (STAR) grant seminars. He added, in response to a question, that the report was limited to discussing how the regions use science, and did not include social or economic science.

Critical Ecosystem Model
Dr. Mary White, Ecologist, Region 5

Dr. White presented a geographic information system (GIS) model to identify landscapes that have high potential to be ecologically significant, prepared by the EPA Region 5 Critical Ecosystems Team (see handout, Attachment G). The Critical Ecosystem Assessment Model (CEAM) takes into account three criteria to assess ecosystem health: diversity, rarity, and sustainability. Twenty (20) geographically referenced data sets were used as indicators for the three criteria; data entered were consistent among the six R5 states and comparable by ecoregion. The three criteria were weighed equally to produce a final composite layer, corresponding to the ecosystem assessment score. The CEAM has been evaluated by peer review through scientific journals and by field validation, and the team has also applied for review by

the SAB. Quick ecosystem assessment protocols such as this model can be used by the programs and regions to evaluate the context of their activities and to prioritize their projects.

EC members suggested coming up with ways to use this tool on different types of land, and identifying those data layers that represent processes rather than static attributes. Dr. White stated that some of the measures used apply to different landscapes. She acknowledged that process data layers were particularly difficult to incorporate. A recent Ecological Processes and Effects Committee (EPEC) report was helpful in this area. Combining the ecoregion approach (based on terrestrial vegetation) with the watershed approach was identified as a topic the SAB could consider. Another suggestion was to use ecological risk assessment combined with this model to measure program offices' performance.

Cumulative Risk
Mr. Mike Callahan, Regional Science Liaison, Region 6

Mr. Callahan briefed the EC on the Agency's Framework for Cumulative Risk Assessment – the first step in a long-term effort by EPA to develop guidance on assessing the accumulation of risks from multiple environmental stressors (see handout, Attachment H). The framework was reviewed by the SAB in two consultations; the document was released six weeks ago. Near-future plans include the development of several issue papers on topics that arose while working on the framework

Mr. Callahan then introduced Mr. Jeff Yurk, who presented an overview of the Regional Air Impact Modeling Initiative (RAIMI), a tool for assessing cumulative risk from air emissions which allows resolution at the local level.

Cumulative Risk (cont'ed): Regional Air Impact Modeling Initiative
Mr. Jeff Yurk, Toxicologist, Region 6

RAIMI represents a practical approach to implementing cumulative-type assessment on a localized scale (see Attachment I for PowerPoint slides). This tool was developed by Region 6 and uses multiple emissions data sources to assess community-level inhalation impact by evaluating an unlimited number of stationary and mobile air toxics sources. It utilizes both air and risk modeling components. RAIMI also facilitates the development of solutions by attributing impact back to individual compounds and emission sources. This allows the identification of individual sources for targeted reductions, rather than simply revealing areas of concern. The model's initial findings indicate that a small number of sources may be responsible for the majority of impact. Such models will become useful beyond Region 6, as EPA moves to risk-based approaches across all programs.

The EC complimented the Agency on finalizing the cumulative risk framework. Some EC members requested additional information on the approach used, such as specific risks, endpoints and population characteristics. Mr. Callahan explained that available data were used for the purpose of developing this tool; the analysis performed was not intended to conduct a risk assessment. Some EC members commented that information on the population/community makeup is crucial for determining risk, and others

cautioned that cumulative information does not necessarily take into account the effect of complex mixtures. Several potential applications of this tool were identified, including using this dataset in conjunction with the recently released framework; predicting future risk, or the impact of past regulation; or integrating data sources. Mr. Callahan explained that such applications were planned, and the tool is already being used to identify useful databases and emissions inventories. The model has been submitted to the EPA's Council for Regulatory Environmental Modeling (CREM)for validation, but could benefit from a SAB consultation. Ground-truthing is also essential for each application.

Invasive Species: Great Lakes Basin
Mr. James Schardt, Environmental Scientist, R5 Great Lakes National Program Office

Mr. Schardt presented several examples of invasive species in the Great Lakes (see Attachment J for PowerPoint slides). Commercial shipping is the predominant invasion vector in the Great Lakes, and international shipping traffic has resulted in introductions from many diverse locations. Exchange of ballast waters has led to numerous past invasions, and regulations now require ships to exchange ballast water in mid-ocean before entering the Great Lakes. Ships with no ballast on board may also pose a risk, as some species' eggs or inactive stages remain in the sediment at the bottom of empty ballast tanks. Measures to prevent further invasions include the construction of an electric-field barrier designed to stop introductions through neighboring canals, while allowing shipping traffic to pass through. This dispersal barrier was funded in part by a grant from the Great Lakes National Program Office (GLNPO). In addition to providing such grants, the GLNPO also participates in monitoring and prevention activities, frequently in coordination with other organizations.

Invasive Species Research Directions
Dr. Henry Lee, EPA Office of Research and Development

Dr. Lee presented a general assessment of the EPA's role in invasive species research (see Attachment K for PowerPoint slides), suggesting that it may be helpful if the SAB addressed this issue. A non-indigenous species working group was formed as a result of several workshops on this topic in 1999 and 2000; however, the EPA still does not have an invasive species research program. Challenges to creating such a program have included a lack of resources and lack of understanding of the relationship to EPA's specific mandates and goals . There are also legal questions regarding whether invasive species can be classified as pollutants under the Clean Water Act (CWA).

Despite the lack of a formal research program, EPA is conducting or funding a number of invasive species research projects. These include regulatory issues related to ballast water discharges; the use and registration of pesticides for the control of invasive species; pollutant loading and fate issues; measurement and prediction of ecological effects; wetland and terrestrial restoration; and risk assessment. These research efforts are not well coordinated, however, nor is the research commensurate with the ecological risks, the level of uncertainty, or the effects on EPA regulations. Resources are needed to develop an invasive species research strategy focused on the high-priority regulatory uncertainties.

EC members commented on the importance of this issue, adding that it is a challenge not only for the Agency but also for the entire environmental arena. Several approaches were proposed, including a risk assessment on ballast waters and preparing an issue-driven risk management plan. Other suggestions were identifying the highest probability invaders; considering multiple invasion pathways; monitoring for evidence of recent invasions; and devising a rapid eradication plan for new invaders. If these approaches are to be successful, developing appropriate performance standards is critical. A national strategy is also essential, and EPA could become the lead organization on such an effort.

Dr. Lee explained that, in the area of performance standards, there have been efforts to conduct Total Maximum Daily Load (TMDL) assessments on invasive species, treating them as pollutants. He added that the question of whether this is an issue for EPA to consider continues to impede progress in this area, and reiterated the importance of SAB involvement, if the Board believes this topic falls within the EPA's role.

Concentrated Animal Feeding Operation (CAFO) Science
Mr. Steve Jann, Environmental Scientist, Region 5

Mr. Jann presented an overview of the EPA's use of science and regulations related to animal feeding operations (see Attachment L for PowerPoint slides). Waste from such facilities is most often disposed of or utilized by land application, and can result in adverse effects on human health and the environment. Although management programs exist, participation is voluntary. Six percent (6%) of these enterprises are confined animal feeding operations (CAFOs) and, as such, are subject to regulation under the CWA. The EPA revised these regulations this year, deferring to the states and regions for the development of standards for the land application of manure, provided that both the rate and timing of application are addressed in these standards. The new regulations are expected to reduce the concentration of pollutants in both surface water and nearby wells. A variety of analyses were conducted to support these revisions.

The Agency is also involved in other science activities addressing this topic. A report was recently commissioned by the National Academy of Sciences on air emissions from AFOs which, along with other efforts, will help establish a clean air policy for AFOs. In an attempt to identify needs for future research, ORD asked regional and program offices to submit important research questions related to AFOs (see slides for some example questions). ORD will prioritize the questions submitted, meet with other Federal Agencies to discuss them, and publish a report providing answers to some and listing others as future research areas.

The EC offered suggestions of other topics to consider for future research and in refining regulations (e.g., design of storage structures, planning for chance events that may lead to overflows). It was suggested that appropriate measures be developed to assess the performance of these new regulations. Some members pointed out the non-conventional stressors involved, such as allergens and antibiotics. A concern was raised that a number of the research questions presented have existed for many years; although EPA plans to coordinate research efforts internally, this approach may not

capture findings from research conducted at state programs, universities' agriculture departments, and others.

Emerging Contaminants
Ms. Janette Baxter, Senior Science Policy Advisor, Region 9

Ms. Baxter presented Region 9's approach to responding to emerging issues using four case study examples from Superfund and other delegated programs (see Attachment M for PowerPoint slides). Superfund programs emphasize local issues, are implemented by the regions, and can establish cleanup levels without previously existing limits (e.g., MCLs, WQCs). Delegated programs focus on national issues and are implemented by the states and tribes; such programs have a greater need for defined limits. In general, Superfund programs also have more resources. The Superfund program has built EPA's capacity to develop analytical methods and improve toxicity databases, and has improved expertise in regional laboratories and the ability to collect monitoring data in the absence of standards. However, it lacks the ability to show whether a certain chemical is a multi-regional problem. Delegated programs have benefited from partnerships (with ORD, other Agencies, and other countries) and often receive regional funds for the development of methods. Resources are still needed, however, as are methods for chemicals with multiple congeners. The lack of MCLs and WQCs also impede monitoring that could establish the extent of occurrence.

Several examples were presented of how improved science can help monitoring for emerging contaminants. Faster and cheaper monitoring methods are needed, as are better and faster ways to evaluate risk. Reducing the time it takes to develop standards would also improve the monitoring and assessment of new chemicals. As many emerging contaminants are multiple-congener chemicals, methods are especially needed for measuring these types of chemicals.

In response to questions from the EC, Ms. Baxter explained that measurements are used to feed into risk assessment processes, and added that several multi-regional groups exist to discuss different aspects of this topic. The SAB can help by bringing these regional needs to the Agency's attention; by holding informal consultations on whether there is enough information to support a decision; and by assisting with the identification of emerging clues. EC members agreed, adding that a basic framework could be developed for the identification of emerging patterns and chemicals. Metal modeling research and the planned SAB panel on computational methodology could provide yet more predictive techniques. Some concern was expressed that persistent chemicals would be over-represented in such analyses compared to transient ones.

The meeting was adjourned for the day following this discussion and re-convened the next day, July 17, 2003.

Tribal Science
Dr. Patricia Cirone, Chief of the Risk Evaluation Unit, Region 10

Dr. Cirone presented an overview of the Tribal Science Council, focusing on the concerns of tribes (see slides and handouts, Attachments N-Q). The Council is a collaborative effort between EPA and the tribes – a government-to-government

relationship, since the tribes are treated as states. Traditional science approaches, such as exposure routes, may affect tribal health and well being differently, and exposure models may not be accurate for all cultures. An immediately obvious difference is in the consumption patterns of wild caught fish compared to Western diets. An example was presented of a collaborative project: fish were collected by tribal members and their tissues analyzed by EPA for the presence of bioaccumulative pollutants.

The EC agreed that incorporating tribal information into a risk assessment approach is an interesting but challenging issue. The relationship between scientific and culturally based knowledge is complex, and data validation can be a problem, particularly since primary data are considered tribal property and are not always available. Re-considering exposure assumptions to take into account a tribal lifestyle may be an interesting discussion topic for the SAB. The Board could also assist by holding a workshop for the purpose of educating and involving more tribal members. Some members cautioned that risk assessment is a regulatory tool to inform a community about risk, and is not intended to measure individual risk. Another problem with risk assessment is that it may be used to limit tribes' treaty rights through standards or controls. Although the SAB can provide advice, it may be premature to try to impose the risk assessment paradigm in a situation where there may be fundamental problems with doing so.

Chairman's Summary

Dr. Glaze thanked the meeting organizers from both the SAB Staff Office and regions. The EC looks forward to more frequent interaction with the regions in the future and suggestions on how the SAB can add value to regional science, either through informal discussion or more formal consultations and reviews.

Board of Scientific Counselors (BOSC) Update

Dr. Jerald Schnoor (ORD/BOSC Chair) presented a brief report to the SAB. Dr. James Johnson was named by Dr. Paul Gilman as the new BOSC Vice Chair, and will be an *ex officio* member of the re-organized SAB. Reports were prepared this year on each of the ORD laboratories and centers and on scientific communication within ORD and the Agency; these can be made available to the SAB. Nominations are being accepted for BOSC members. New business will include the Multi-Year Plan (MYP) for mercury and a report on homeland security, scheduled for Fall 2003. The Report on the Environment is now complete and is posted on the EPA website.

Action Item:

- Submit any nominations for BOSC members to Dr. Jerald Schnoor.

Consideration of FY04 Proposed Activities

Dr. Vanessa Vu distributed tables listing Agency-nominated and self-initiated projects for FY2003 (see Attachments R and S). The Science Policy Council (SPC) reviewed the nominated projects but did not rank them, as resources are sufficient to complete all projects; the self-initiated projects were assigned ranks by the EC. Dr. Vu then briefly reviewed each of the Agency-nominated projects.

The EC discussed MYPs, several of which are reviewed each year. Although the MYPs give the SAB some information on overall science activities in the Agency, they tend to focus on project budgets. It is not practical for the Board to review each MYP, but there should be a mechanism for looking at broad, cross-cutting research strategies. The Research Strategies Advisory Committee (RSAC) is not simply a budget review committee, though part of its role is to inform Congress whether EPA has funded the right research as its primary targets. Dr. Vu confirmed that the Staff Office is working with the Agency to update the role of RSAC so that it is primarily a research strategies committee. The Council of Chairs was proposed as a mechanism for identifying occasions when one committee should be aware of another committee's work.

The project titled "Treatment of Uncertainty in Economic Analysis" is listed as a consultation, yet it seems to be an ambitious project, and may eventually lead to a review.

The project titled "Valuation of Mortality Risk Reduction" was briefly discussed. EC members commented that revisiting the literature may be necessary, an undertaking that requires substantial resources from the Agency.

More information was requested on the "EPI Suite" project. Dr. Vu explained that this is an important predictive tool used extensively by the toxics program. The Office of Prevention, Pesticides and Toxic Substances (OPPTS) has requested evaluation and ground truthing so that this model may continue to be used. She added that this project may be re-assigned to the Environmental Engineering Committee (EEC).

Dr. Glaze solicited the EC's opinions on prioritizing the list of projects. In view of the self-initiated projects on the SAB's agenda this year, it is important for the EC to decide which Agency-nominated projects are lower in priority. He added that, although none of the projects are mandated, several are essential to the Agency. The IRIS assessments listed, for example, were identified by ORD as important, high-profile chemicals. It was noted that the list of projects is not representative of the reorganized SAB, lacking any longer-term, cross-cutting projects. However, this type of projects will be an additional task for the Board, which will still serve the Agency in the best possible way. In order to accomplish both types of tasks, the SAB must devise a process for assigning priorities.

Self-initiated projects were discussed next, and Dr. Vu stated that resources allow up to three of these to take place in the next year. The Agency was particularly interested in the Integrated Research Approach for Nitrogen (Project 3) and Examining Potential Synergies between Efforts to Improve Drinking Water through the SDWA and CWA (Project 11). Dr. Paul Gilman has suggested some topics for the SAB to consider, including insight on future science associated with the State of the Environment Report, whether ORD is addressing the right science questions, and the integration of human health and ecological issues. It was suggested that the SAB consider burden to the Agency when choosing self-initiated projects.

Action Items:

- Send any input on prioritizing self-initiated projects to Dr. Vanessa Vu.

- Dr. Vu will discuss projects 3, 11, 14, 15 and 17 with SAB committees, and provide more information on each at the October 2003 EC meeting.

Update on Other SAB Activities

The EC discussed the logistics and scheduling of the next EC meeting, planned for October 1-2, 2003. Dr. Vu proposed extending the meeting to 2 ½ days, so that committees could meet immediately following the EC meeting. She also requested volunteers from the EC to provide advice and input on the meeting agenda.

Action Item:

- The Staff Office will discuss scheduling details for the October 2003 meeting with all committee Chairs via email.

Dr. Glaze proposed Dr. David Rajeski, who spoke at the science forum, and Dr. Paul Gilman, as potential speakers to invite.

Mr. Flaak listed two other upcoming meeting dates for the EC. A teleconference is planned for December 4, 2003, and the next meeting (after October) will be on January 13-14, 2004.

Closing Remarks & Adjourn

Dr. Kasperson proposed using the discussions that took place with the regions as starting points for identifying future SAB discussion and directions.

Dr. Glaze adjourned the meeting at 12:00 noon.

Respectfully Submitted:

/Signed/
A. Robert Flaak
Designated Federal Officer

Certified:

/Signed /
William H. Glaze
Chair, Science Advisory Board

LIST OF ACTION ITEMS

_ Submit any nominations for BOSC members to Dr. Jerald Schnoor.
_ Send any input on prioritizing self-initiated projects to Dr. Vanessa Vu.
_ Dr. Vu will discuss projects 3, 11, 14, 15 and 17 with SAB committees, and provide more information on each at the October 2003 EC meeting.
_ The Staff Office will discuss scheduling details for the October 2003 meeting with all committee Chairs via email.

LIST OF ATTACHMENTS

Attachment A:	Meeting Agenda
Attachment B:	Roster of the Executive Committee
Attachment C:	Federal Register Notice
Attachment D:	Meeting Sign-in Sheet
Attachment E:	List of EC Members Serving as Discussion Leaders
Attachment F:	PowerPoint Slides: Report on Using Science for Regional Decision Making (Thomas Baugh)
Attachment G:	Handout: Landscape Evaluation of Ecosystem Health Using Existing Data Sets (Mary White)
Attachment H:	Handout: Framework for Cumulative Risk Assessment (Michael Callahan)
Attachment I:	PowerPoint Slides: Cumulative Risk Tool (Jeff Yurk)
Attachment J:	PowerPoint Slides: Invasive Species in the Great Lakes Basin (James Schardt)
Attachment K:	PowerPoint Slides: Invasive Species Research Directions (Henry Lee)
Attachment L:	PowerPoint Slides: Environmental Science on Animal Feeding Operations (Steve Jann)
Attachment M:	PowerPoint Slides: Responding to Emerging Issues (Jan Baxter)
Attachment N:	PowerPoint Slides: Tribal Science (Patricia Cirone)
Attachment O:	Handout: Tribal Science Council (Patricia Cirone)
Attachment P:	Handout: Health and Well Being Assessment Proposed Methodology (Patricia Cirone)
Attachment Q:	Handout: List of Tribal Science Projects by Region (Patricia Cirone)
Attachment R:	Handout: SAB FY04 Projects
Attachment S:	Handout: SAB Self Initiated Projects

Attachment A

US Environmental Protection Agency (EPA)
EPA Science Advisory Board (SAB) Executive Committee (EC)
Quarterly Public Meeting
Final Agenda

July 16-17, 2003

***Meeting Location*: EPA Region 5**
Lake Michigan Room, 12th floor Adamkus Conference Center,
Metcalfe Federal Building, 77 West Jackson Blvd., Chicago, IL

Wednesday, July 16, 2003

9:00	Convene the Meeting, Meeting Administration, Staff Introductions	Mr. Robert Flaak *Designated Federal Officer;SAB Staff Office*
	Welcome	Dr. Vanessa Vu *Director SAB Staff Office*
	Opening Remarks	Dr. William Glaze *Chair, EPA SAB*
9:20	Use of Science in Regional Decision Making Overview and Introduction.	Mr. Bharat Mathur *Deputy Regional Administrator, Region 5*
9:35	45 Day Review for Science	Mr. Thomas Baugh *Regional Science Liaison, Region* 4
10:20	Break	
10:45	Critical EcoSystem Model	Dr. Charles Maurice *Ecologist, Region 5* Dr. Mary White *Ecologist, Region 5*
11:30	Cumulative Risk	Mr. Mike Callahan *Regional Science Liaison, Region 6* Mr. Jeff Yurk *Toxicologist, Region 6*
12:30	Lunch	
1:30	Use of Science in Regional Decision Making (continued) Invasive Species	Dr. Henry Lee *EPA Office of Research and Development* Mr. James Schardt *Environmental Scientist, Region 5 Great Lakes National Program Office*
2:30	Concentrated Animal Feeding	Mr. Steve Jann

	Operation (CAFO) Science	*Environmental Scientist, Region 5*
3:25	Break	
3:45	Emerging Contaminants	Ms. Janette Baxter *Senior Science Policy Advisor, Region 9*
4:45	Recess for the Day	

Post Meeting Activities

6:30 Dinner – Rhapsody Restaurant, 65 East Adams (Planned)

Thursday, July 17, 2003

8:30	Regional Science Presentations (continued)	
	Tribal Science	Dr. Patricia Cirone *Chief of the Risk Evaluation Unit, Region 10*
9:15	Chairman's Summary	Dr. William Glaze *Chair EPA SAB*
9:30	Break	
10:00	Board of Scientific Counselors (BOSC) Update	Dr. Jerald Schnoor *Chair, ORD BOSC*
10:10	Consideration of FY04 Proposed Projects	Dr. Vanessa Vu *Director, SAB Staff Office*
11:45	Update on Other SAB Activities	Dr. William Glaze and Dr. Vanessa Vu
12:00 pm	Adjourn Public Meeting	

For Further Information:

Information and copies of materials concerning this meeting are posted on the EPA Science Advisory Board Website at: http://www.epa.gov/sab/ecpubmtg071603.html

For Administrative Information concerning this meeting of the SAB Executive Committee, please contact Ms. Betty Fortune at 202-564-4534 or fortune.betty@epa.gov. For Technical Information, please contact Mr. Robert Flaak at 202-564-4546 or flaak.robert@epa.gov.

Attachment B

U.S. Environmental Protection Agency
Science Advisory Board
Executive Committee

July 16-17, 2003 Meeting
Region 5 - Chicago, IL

CHAIR

Dr. William H. Glaze, Professor, Department of Environmental & Biomolecular Systems, OGI School of Science & Engineering, Oregon Health & Science University, Beaverton, OR

SAB MEMBERS

Dr. Henry Anderson, Chief Medical Officer, Division of Public Health, Wisconsin Division of Public Health, Madison, WI
Also Chair: Environmental Health Committee

Dr. Gregory Biddinger, Environmental Issues Advisor, Exxon Mobil Refining and Supply Company, Fairfax, VA
Also Member: Ecological Processes and Effects Committee
[Dr. Biddinger is sitting-in for Virginia Dale and representing EPEC]

Dr. Trudy Cameron, Raymond F. Mikesell Professor of Environmental and Resource Economics, Department of Economics, University of Oregon, Eugene, OR
Also Chair: Advisory Council on Clean Air Compliance Analysis
[Not attending in person - teleconference on July 17th only]

Dr. Maureen L. Cropper, Lead Economist, The World Bank, Washington, DC
Also Chair: Environmental Economics Advisory Committee
[Attending on July 17th only]

Dr. Kenneth Cummins, Interim Director, Institute for Forest and Watershed Management, Humboldt State University, Arcata, CA

Dr. Virginia Dale, Corporate Fellow, Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN
Also Chair: Ecological Processes and Effects Committee
[NOT Attending]

Dr. Domenico Grasso, Rosemary Bradford Hewlett Professor and Chair, Picker Engineering Program, Smith College, Northampton, MA
Also Chair: Environmental Engineering Committee
[NOT Attending]

Dr. Linda Greer, Senior Scientist, Natural Resources Defense Council, Washington, DC
Also Member: Research Strategies Advisory Committee
[NOT Attending]

Dr. Philip Hopke, Bayard D. Clarkson Distinguished Professor, Department of Chemical Engineering, Clarkson University, Potsdam, NY

Also Member: Research Strategies Advisory Committee
Also Chair: Clean Air Scientific Advisory Committee

Dr. Janet A. Johnson, Senior Technical Advisor, MFG, Inc., Fort Collins, CO
Also Chair: Radiation Advisory Committee

Dr. Roger E. Kasperson, Executive Director, Stockholm Environment Institute, Stockholm, Sweden,
Also Member: Research Strategies Advisory Committee

Dr. Raymond C. Loehr, Professor, Department of Civil Engineering, University of Texas, Austin, TX

Dr. Genevieve Matanoski, Professor, Department of Epidemiology, Johns Hopkins University, Baltimore, MD
Also Chair: Research Strategies Advisory Committee

Dr. M. Granger Morgan, Head, Department of Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, PA

Dr. Rebecca Parkin, Associate Research Professor, Environmental and Occupational Health, Public Health and Health Services, The George Washington University, Washington, DC
Also Chair: Integrated Human Exposure Committee

Dr. William H. Smith, Clifton R. Musser Professor Emeritus of Forest Biology, Yale University, Center Harbor, NH
[NOT Attending]

Dr. Thomas Theis, Director, Institute for Environmental Science and Policy, University of Illinois at Chicago, SPHW, Chicago, IL
Also Member: Environmental Engineering Committee
[Dr. Theis is sitting-in for Dr. Grasso and representing EEC]

Dr. R. Rhodes Trussell, Senior Vice President, Trussell Technologies, Inc., Pasadena, CA
(**Error! Hyperlink reference not valid.** jayne.chesebrough@trusselltech.com)
Also Chair: Drinking Water Committee

SCIENCE ADVISORY BOARD STAFF

Mr. A. Robert Flaak, Designated Federal Officer, EPA Science Advisory Board (1400A), 1200 Pennsylvania Avenue, NW, Washington, DC, 20460

Ms Betty Fortune, Office Assistant, EPA Science Advisory Board (1400A), 1200 Pennsylvania Avenue, NW, Washington, DC, 20460

Attachment C

http://www.epa.gov/fedreg/EPA-SAB/2003/June/Day-24/sab15904.htm
http://www.epa.gov/fedreg/
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[Federal Register: June 24, 2003 (Volume 68, Number 121)]
[Notices]
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From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr24jn03-68]

ENVIRONMENTAL PROTECTION AGENCY
[FRL-7518-2]

Science Advisory Board; Notification of Public Advisory Committee Meeting; Executive Committee

AGENCY: Environmental Protection Agency (EPA).
ACTION: Notice.

SUMMARY: The Environmental Protection Agency (EPA) Science Advisory Board (SAB) Executive Committee (EC), a Federal Advisory Committee, will hold a public meeting on the date and time given below to obtain briefings on EPA Regional science issues, and to discuss the SAB Operating Plan for FY2004.

DATES: The meeting will take place on Wednesday and Thursday, July 16-17, 2003 beginning 9 a.m. on July 16 and adjourning no later than 12 noon on July 17 (Central Time). Requests for oral comments, as well as submission of written comments must be received by July 8, 2003. Please see further details below.

ADDRESSES: The meeting will be held in the Lake Michigan Conference Room, U.S. EPA Region 5 Headquarters, Metcalfe Federal Building, 77 West Jackson Boulevard, Chicago, Illinois. For meeting location, building access, and visitor information, please see the Region 5 Web site at: <A HREF="http://www.epa.gov/region5/visitor/index.htm">http://www.epa.gov/region5/visitor/index.htm</A>.

FOR FURTHER INFORMATION CONTACT: Any member of the public wishing further information concerning this meeting or wishing to present oral comments must contact Mr. A. Robert Flaak, Designated Federal Officer, EPA Science Advisory Board (1400A), U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW., Washington, DC 20460; telephone (202) 564-4546; Fax (202) 501-0582; or via e-mail at <A HREF="mailto:flaak.robert@epa.gov">flaak.robert@epa.gov</A>.

SUPPLEMENTARY INFORMATION: Summary: Pursuant to the Federal Advisory Committee Act, Public Law 92-463, notice is hereby given that the EC of the U.S. EPA Science Advisory Board (SAB) will hold a public meeting to discuss the following topics:

(a) EPA Regional Science Issues--The SAB will receive briefings from, and discuss scientific issues, with Regional senior leadership and scientists. These are designed to: (1) inform the SAB about regional science issues and concerns; (2) identify opportunities for future SAB and Regional office interactions on topics of interest; and (3) provide the regions with insights into the overall SAB role in advising the

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Agency on the technical underpinnings of the Agency's science and environmental decisions.

(b) SAB Operating Plan for FY2004--The Board will discuss the proposed projects submitted by Agency offices and regions and the self-initiated projects proposed by the SAB during this meeting. These projects are all being considered for inclusion in the SAB's FY2004 Operating Plan (see below for availability of these project summaries).

A meeting agenda will be posted on the SAB Web site (see below) approximately 10 days prior to the meeting. Any additional topics developed for this meeting will be reflected in the agenda.

The SAB was established by 42 U.S.C. 4365 to provide independent scientific and technical advice, consultation, and recommendations to the EPA Administrator on the technical basis for Agency positions and regulations. General information about the EPA Science Advisory Board, may be found on the SAB Web site (<A HREF="http://www.epa.gov/sab">http://www.epa.gov/sab</A>).

Requests for Comment: Requests for oral comments must be in writing (e-mail, fax or mail) and received by Mr. Flaak no later than noon Eastern Standard Time on July 8, 2003. Written comments should also be sent to Mr. Flaak prior to the meeting. Submission of written comments by e-mail to Mr. Flaak will maximize the time available for review by the EC.

Availability of Review Materials: All preliminary meeting materials will be posted on the SAB Web site at: (<A HREF="http://www.epa.gov/sab/whatsnew.htm">http://www.epa.gov/sab/whatsnew.htm</A>)
approximately ten days prior to the meeting.

General Guidance on Providing Oral or Written Comments at SAB Meetings: It is the policy of the EPA Science Advisory Board to accept written public comments of any length, and to accommodate oral public comments whenever possible. The EPA Science Advisory Board expects that public statements presented at its meetings will not be repetitive of previously submitted oral or written statements.

Oral Comments: In general, each individual or group requesting an oral presentation at a face-to-face meeting will be limited to a total time of ten minutes (unless otherwise indicated above). For teleconference meetings, opportunities for oral comment will usually be limited to no more than three minutes per speaker and no more than fifteen minutes total. Deadlines for getting on the public speaker list for a meeting are given above. Speakers should bring at least 35 copies of their comments and presentation slides for distribution to the reviewers and public at the face-to-face meetings.

Written Comments: Although the SAB accepts written comments until the date of the meeting (unless otherwise stated), written comments should be received in the SAB Staff Office at least one week prior to the meeting date so that the comments may be made available to the committee for their consideration. Comments should be supplied to the appropriate DFO at the address/contact information noted above in the following formats: one hard copy with original signature, and one

electronic copy via e-mail (acceptable file format: WordPerfect, Word, or Rich Text files (in IBM-PC/Windows 95/98 format). Those providing written comments and who attend face-to-face meeting are also asked to bring 35 copies of their comments for public distribution.

Meeting Access--Individuals requiring special accommodation at this meeting, including wheelchair access to the conference room, should contact Mr. Flaak at least five business days prior to the meeting so that appropriate arrangements can be made.

Dated: June 16, 2003.
Vanessa T. Vu,
Director, EPA Science Advisory Board Staff Office.
[FR Doc. 03-15904 Filed 6-23-03; 8:45 am]
BILLING CODE 6560-50-P